

Architects Memo No 49 Colourful-Colourfast

Paint coatings are the cosmetics of the building industry and although specifiers are obviously aware of the protection paints can give to the skin of a building the decorative and beautifying effects are often uppermost in the mind of the designer. A well conceived and executed colour scheme enhances any building and creates a feeling of well-being in it's users and viewers.

The effectiveness of a colour scheme depends on the colour actually being used on the structure matching the colours the designer originally used, and staying that way. Now one may be forgiven for imagining that if one specifies a colour from a well known and acceptable standard, then no matter what the source of the colour, the hue and performance of it should be uniform! Would that the world could be so simple.

The harsh reality is that a colour standard is seen as an imprecise guide which can vary from each different printing of the standard itself, and can never be determined to appear the same to any two viewers! When attempting to duplicate the standard a colour matcher will attempt to get to within a certain distance of the target. The matcher may miss by being too light or too dark; too red or too green; too blue or too yellow. The sum of these distances from the target is known technically as Delta E and a value of less than one is considered a very good match. If matcher (or company) A misses on the red side, and B misses on the green side, each may have an acceptable match to the standard but will differ significantly one from the other. Therefore, even in terms of shade, it is unlikely that Company A's colours will be a match for Company B's.

Shade however, is only one of three important properties of a colour, the second of which is hiding power. Hiding power is determined by the type of pigment used and, in all cases, the amount of it. Some pigments have inherently good opacity and are relatively cheap, thus hiding is rarely a problem when, for example, iron oxides can be used to produce a shade. Other important pigments can be relatively transparent, and very expensive, which produces a much greater dilemma when these are required to produce a desired shade.

The ubiquitous tinting systems used by the paint industry may all seem to be the same to the uninitiated but major differences do exist from system to system. Many systems are 'locked-in' to old technology tinters, due to the enormous amount of work required to change. Modern tinters can be up to four times more powerful than their predecessors and can achieve excellent hiding in cases where there would be simply insufficient room in the can to fit the required amount of weaker tinter.

Originally these systems were designed around very simple colour ranges and utilised only four white bases. A 20% addition of tinter was often necessary, with all of the accompanying pitfalls! Resene's pioneering work in adapting tinting systems for more demanding colour ranges has, via many 'firsts', lead to the present system necessitating fourteen different specialised bases. The tinters themselves have demanded customised development and manufacture as, sometimes, even the best overseas products have fallen short of New Zealand's climatic demands.

Where a colour is to be exposed to the elements, the third major parameter, durability, must be considered. The reader is referred to Memo No.35 'Colour & Durability' for background on this subject.

Shades are invariably composed of more than one colour component and it is crucial that this componentry is balanced, one with the other. For example, if a claret shade is obtained by shading a very colourfast purple with a less durable bright red; in a short time the red component will fade, the purple component will not, and the claret will turn to lees.

Many shades, because of subtleties of tone, demand the use of pigments which may be less durable than desired. Similar, less subtle, shades may exist which have inherently greater durability. Designers may well be happy to accept some compromise in shade for certain commissions where durability is paramount. It is almost impossible to quantify any single colour in terms of durability, due to variations in exposure conditions, but excellent comparative advice can be given. Resene Paints Limited urges clients to discuss their colour choice with their technical staff where durability concerns may exist.

Resene
The paint the professionals use.